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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,521	11/14/2001	Beomsup Kim	BEKAP007	4390
21912	7590	12/22/2003	EXAMINER	
VAN PELT & YI LLP			KINKEAD, ARNOLD M	
10050 N. FOOTHILL BLVD #200			ART UNIT	
CUPERTINO, CA 95014			PAPER NUMBER	

2817

DATE MAILED: 12/22/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/004,521

Applicant(s)

KIM, BEOMSUP

Examiner

Arnold M Kinkad

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 51363
5/08/03
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: [Signature]

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DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over (10-0278551 Korea of record) and further in view of Jeong et al(US 6,094,103 new cite).

The reference shows a multiple LC oscillator(see figures 8,9, and 10) comprising a plurality of LC oscillator stages that are coupled to preceding and succeeding stages(see figure 10). Each stage having more than two inputs and two outputs going to a plurality of adjacent stages. Note that one stage in figure 9 has more than two outputs for coupling to adjacent stages.

The reference does not show four stages for the differential implementation with more than two outputs per stage, and phase synchronous operation is not explicit. With regards the phase synchronous operation, by virtue of the connections as shown such, the phase of each stage will be the same, i.e., each will contribute 120 degree(same) phase.

With regards the use of four stages, the reference by Jeong et al shows four stages(see figure 4) which is conventional due to the fact that both odd and even number of stages is allowed in a differential design. The more

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stages provides operation at lower frequencies. Please note that all the stages of Jeong et al have more than two outputs for coupling adjacent stages.

In light of the above it would have been obvious for one of ordinary skill in the art to have recognized the phase sync between the stages as a result of the particular coupling and also, the use of even or odd numbers of stages being a conventional design, as shown by Jeong et al, for the differential type ring oscillator. The more stages the oscillator has the lower the frequency of operation.

Response to Arguments

3. Applicant's arguments with respect to claims 1-9 have been considered but are moot in view of the new ground(s) of rejection.

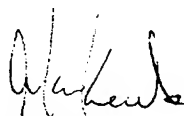
The examiner has considered main argument for the phase of each stage being the same, however, the references do show a similar construction to applicant's figures and also each stage of the ring oscillator will provide an equal phase, such as, 120 degrees(3 stages), or 90(for 4 stages)...

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnold M Kinhead whose telephone number is 703-305-3486. The examiner can normally be reached on Mon-Fri, 8:30 am -5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on 703-308-4909. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7724 for regular communications and 703-308-7724 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

A handwritten signature in black ink, appearing to read "Arnold M Kinkead".

Arnold M Kinkead

Primary Examiner

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Arnold Kinkead

December 15, 2003